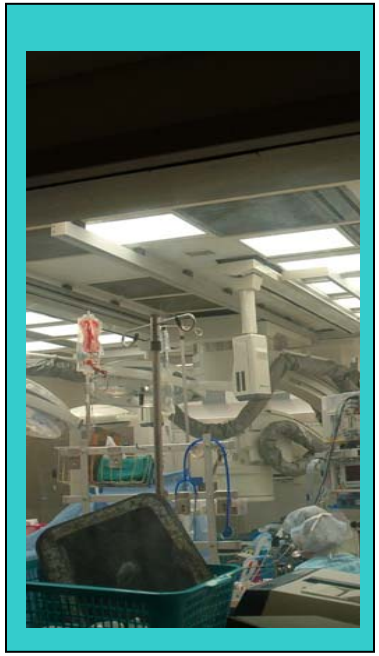
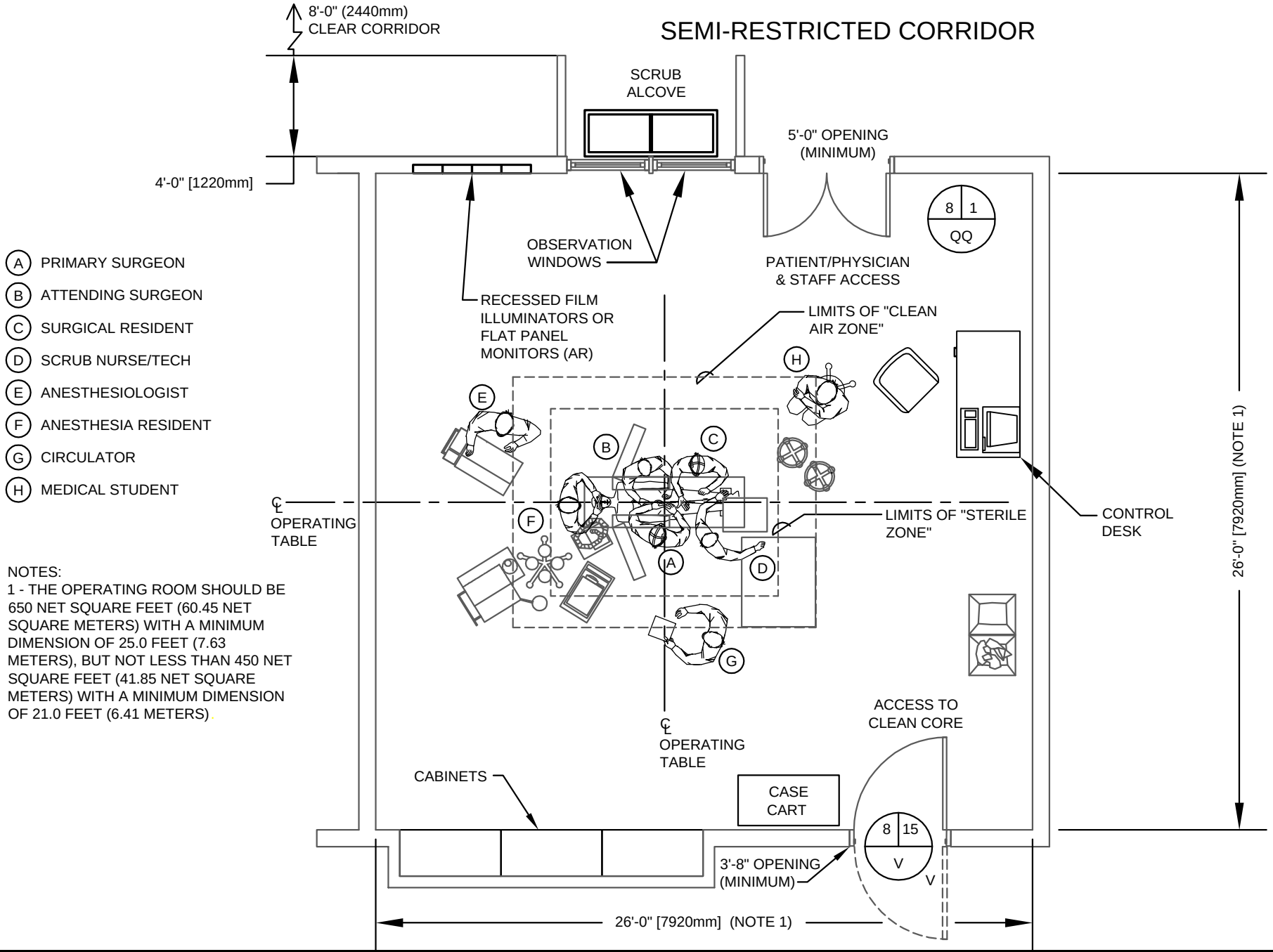
Section 4

Design Guide Plates and Data Sheets Operating Rooms

Guide Plates



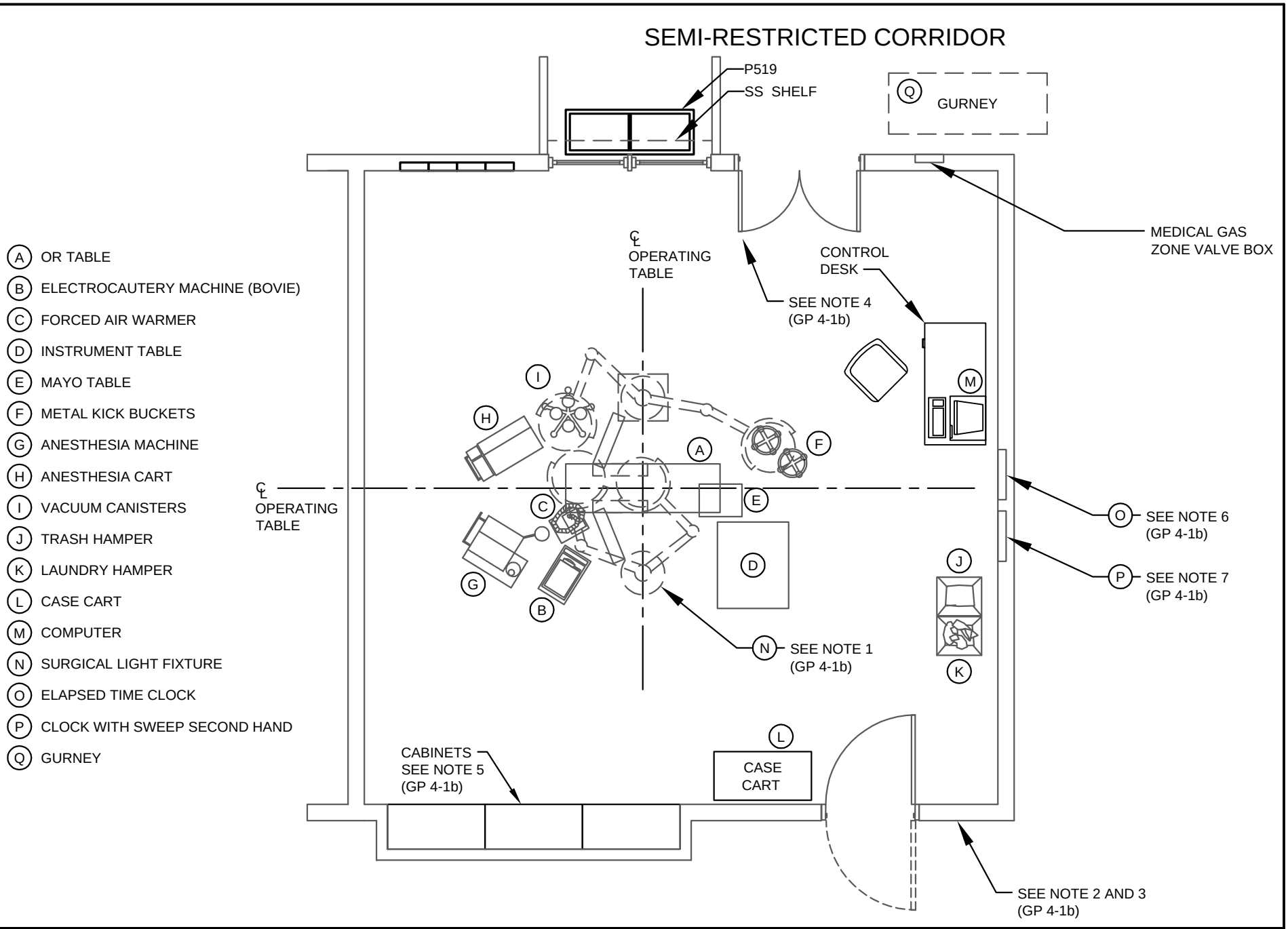
General Operating Room



Design Guide - Surgical Service Department of Veterans Affairs	General Operating Room MAX: 650 NSF (60.45 NSM) MIN: 450 NSF (41.86 NSM)	Ergonomic Plan (METERS) 1 0 1 2 4 (FEET) Scale: 3/16"=1'- 0"	Guide Plate: 4-1a Date: August 2005

Notes:

1. The surgical light fixtures are (CC) unless the VAMC chooses to select a specific surgical light fixture during design development. If the VAMC chooses the fixtures, they should be either (VV) or (CF). Coordination involving structural support, utility connections, and other details are the responsibility of the designer.
2. Nominal thickness of walls should be shown as 8 inches (203 mm) through design development. This is based upon the need to accommodate a variety of panel boards, return air ducts, and miscellaneous elements of construction that require a thicker partition than in other areas of a hospital building. Partitions other than the operating room enclosure should be nominally 6 inches through design development unless a special requirement dictates otherwise.
3. Inclusion of x-ray shielding, consisting of a lead membrane in the partition, lead lined doors, and leaded glass observation windows, is determined on a project basis. According to the VA policy, the final determination of whether or not lead lined walls and other protective measures are required is the responsibility of the hospital's radiation staff officer and VA's National Health Physics Program Official (PH: 501-257-1571).The need for radiation protection is based upon the degree to which portable x-ray equipment is to be used in each of the operating rooms, and continuous occupancy of adjacent spaces. Once it is determined that a lead membrane is required, the exact location of that membrane and details related to it are the designer's responsibility.
4. An automatic door is to be provided between the operating room and the semi-restricted corridor. A wall-mounted switch for the automatic door opener is preferred.
5. Modular Casework - The VAMC has the option of choosing modular casework in lieu of built-in casework. However, this decision must be made during the design development phase of the project. If modular casework that is wall mounted is selected by the VAMC, the partitions must be designed to support the casework. It should be noted that the standard studs found in the master specifications are insufficient to carry this added weight; therefore, the equipment manufacturer's recommendations for supporting partitions should be followed where appropriate.
6. Elapsed Time Clock: Flush Mounted Clock above, with wall mounted accessible controls below. For more information regarding clocks in the operating room see MCS, Division 16, Electrical. (CC)
7. Clock With Sweep Second Hand: Flush mounted clock above, with wall mounted accessible controls below. For more information regarding clocks in the operating room see MCS, Division 16, Electrical. (CC)
8. See Chapter 286 of the Equipment Guide List, PG-7610, Technical Information Library (TIL).



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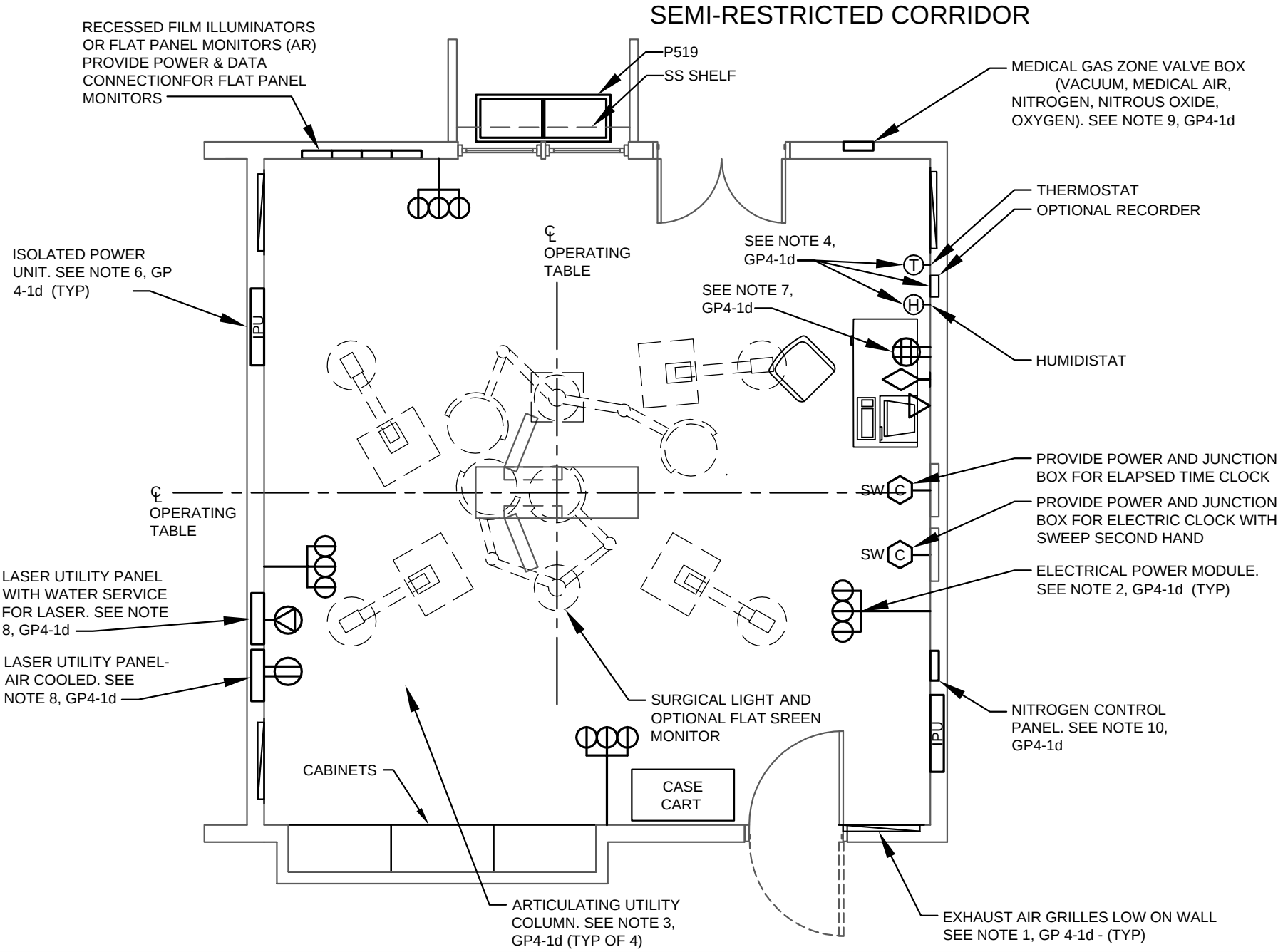
Notes:

1. Exhaust/Return Air Grilles - Provide four exhaust air grilles, (but not less than two), in operating rooms as shown or locate them on center of each wall of the operating room. The bottom of each exhaust air grille is to be seven inches above finished floor. See HVAC Design Manual for Hospital Projects PG-18-10, for additional information.
2. Electrical Power Module - Provide a separate power module near the center of each wall of the operating room. Each power module is to have 3 single power receptacles. These power receptacles are to be located 18 inches above finished floor. Provide power receptacles in each utility column; quantity as required by VAMC. See Electrical Design Manual for Hospital Projects PG-18-10, for additional information.
3. Articulating Utility Column(s) - Provide connections on each utility column as delineated in Chapter 286, Equipment Guide List PG-7610. Provide data/communications connection at each utility column. Provide a telephone outlet on utility column serving anesthesia machine. Number of utility columns and the utilities in each one of them shall be discussed with medical center.
4. HVAC Controllers - Provide one of the two systems for controlling operating room temperature and humidity. The first system as indicated on the utility plan. It involves locating a thermostat, a humidistat, and a recorder in the operating room. The second system involves temperature and humidity sensors located in the operating room, with a recorder located remotely. See HVAC Design Manual for Hospital Projects PG-18-10 for additional information.
5. Video Monitors - The increasing use of fluoroscopy in surgical procedures has increased the need for video monitors located in the vicinity of the "sterile field". With x-ray film soon to be replaced by digitized images displayed on a video screen, the use of these monitors in surgery will increase even further. This emerging technology is called "PACS" (Picture Archiving and Communications System). The VAMC has a choice to make regarding these monitors. A set of video monitors can be mounted on a cart, or the set of flat sreen monitors can be mounted on an articulating arm that is suspended from the ceiling. The latter concept is shown on these guideplates. In either case, the A/E is to determine utility requirements for the video system selected by the VAMC and the VHA program official. These requirements include: power supply; provisions for grounding of the monitors and communications linkage to other areas of the hospital. See Reflected Ceiling Plan Note 9 for a concept that links the Frozen Section area of the clinical laboratory with the video monitors in each of the operating rooms.
6. Isolated Power Unit - Locate two (2) isolated power units near the corners of the room and diagonally opposite from each other. See Electrical Design Manual for Hospital Projects PG-18-10 for additional information. Units shall be flush mounted - adjust wall depth to accommodate unit.
7. Computer Terminal - Utility requirements for the in-room computer terminal are to be determined by the VAMC based upon the computer system to be used, and this information is to be incorporated into the construction documents. The printer for the in-room computer terminals is to be located remotely. Data/communications connections are to be provided at each utility column.
8. Laser Panel - It is understood that air cooled lasers are soon to replace water cooled lasers. For this reason, the future impact of air cooled lasers on the design of the HVAC system must be considered by the designer. In spite of this anticipated change, water and drainage should be provided in operating rooms where existing water cooled lasers are to be continued in use. Coordinate utility requirements with laser manufacturer.
9. Zone Valve Box - Provide a separate medical gas zone valve box for each operating room in accordance with NFPA 99. Locate this cabinet in the semi-restricted corridor near the door to the operating room it serves. See MCS, Division 15, Mechanical for a description.
10. Nitrogen Control Panel - See NFPA 99 and MCS, Division 15, Mechanical for information regarding this panel.



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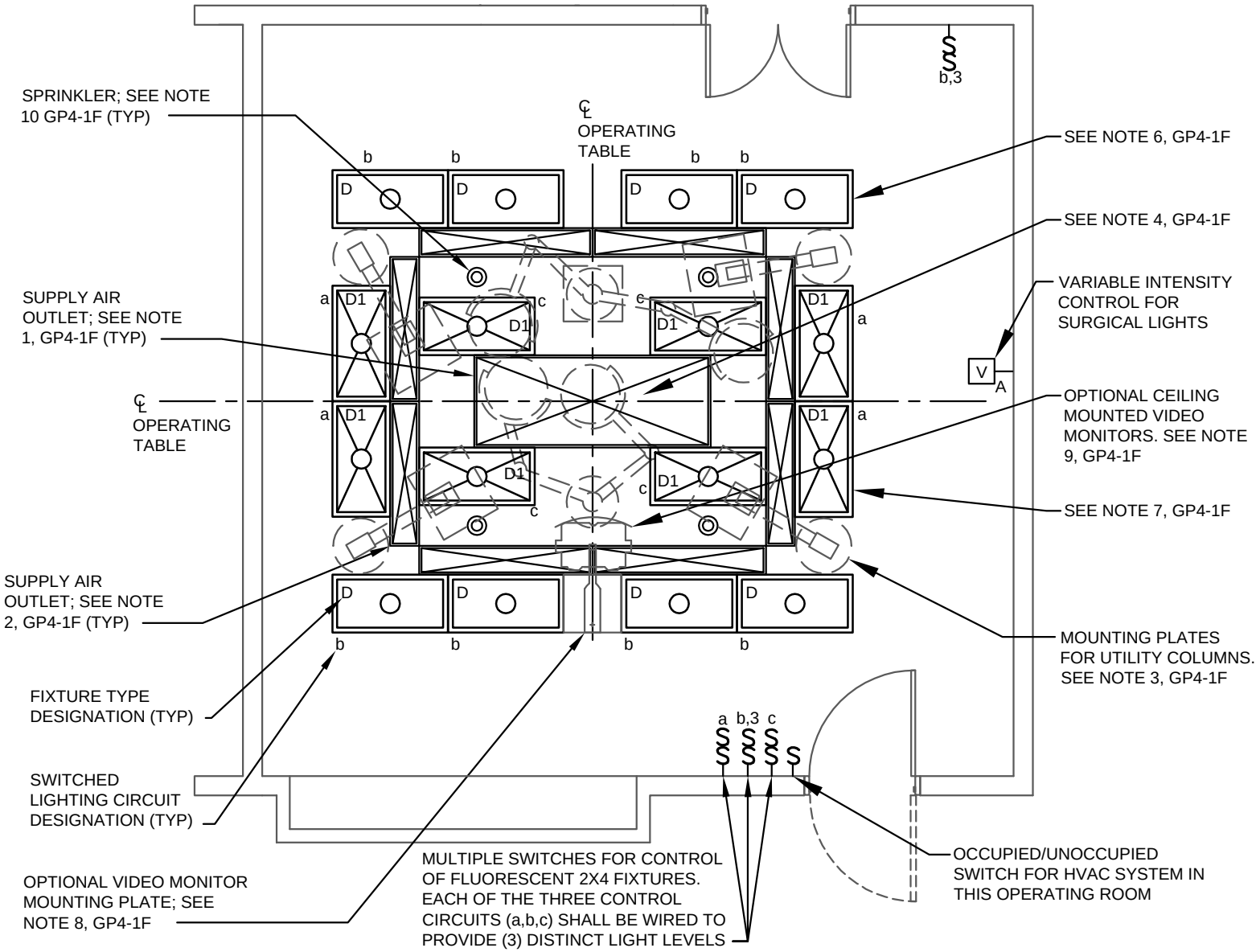
Notes:

1. Supply Air Outlet - Perforated stainless steel panel centered over operating table with no obstructions. A/E is to design it. (Do not scale.) This outlet is to provide 30 percent of supply air for the operating room. Air distribution is to be in a downward vertical direction. See HVAC Design Manual for Hospital Projects, PG-18-10.
2. Supply Air Outlets - Stainless steel multiple slot panel diffusers to be located above the perimeter of the "clean air zone". (See Ergonomic Plan.) A/E is to design them. (Do not scale.) These outlets are to provide 70 percent of supply air for the operating room. This air is to be discharged in a vertical air stream inclined at an outward angle of fifteen degrees from the center of the room. See HVAC Design Manual Hospital Projects, PG-18-10.
3. Mounting Plate for Articulating Utility Column - (Do not scale.) Size of mounting plate varies with manufacturer. Exact type, size, type, and location are to be determined by the A/E in coordination with the VA. Structural support & mounting details by A/E.
4. Surgical Light Fixture - Note that the location of the mounting plate is not to be placed directly over the operating table. That zone must be kept unobstructed for the supply air outlet and the plenum serving it above the ceiling. See Electrical Design Manual for Hospital Projects, PG-18-10. Exact type and quantity to be determined by the A/E in coordination with the VA.
5. Surgical Microscope - If VAMC chooses a ceiling-mounted microscope in lieu of a floor-mounted unit, it must be supported by a fixed mounting plate. A ceiling track-mounted system is not to be used for the microscope due to concerns regarding asepsis. The exact size of the mounting plate depends upon the microscope selection. (Do not scale.) Coordinate details and utilities requirements with the VAMC.
6. Fluorescent Light Fixtures - General illumination. Only 2 x 4 recessed fixtures are to be used in the operating room due to the fact that this size of fixture (with 6 lamps - Type D) is required in order to deliver enough ambient illumination while also producing color corrected light in the operating room. The design is not to include 1 x 4 fluorescent fixtures. Each group of fixtures (a,b,c) shall be controlled by switches (dimmers are not acceptable) so that 3 distinct levels of illumination are provided. For example, in the fixtures designated by "a," "b" and "c," the (2) outside lamps shall be controlled by one switch; the (4) inside lamps shall be controlled by a second switch.
7. General Illumination on Emergency Power - 50 percent of the fluorescent light fixtures above the operating table are to be on emergency power with battery backup (Type D1). The fluorescent fixtures above the head of the patient (where the nurse anesthetist administers anesthesia and monitors the patient's vital signs) are to be on emergency power. Since the "head of the table" may be reversed on occasions when the ceiling-mounted microscope is in use, fluorescent fixtures above both ends of the table are to be on emergency power.
8. Mounting Plate for Video Monitors - If the VAMC chooses a suspended video system instead of a cart-mounted system, the mounting plate must be integrated into the ceiling layout. The exact size and location of this plate must be determined. The mounting plate for the video monitors is not to be supported on tracks due to asepsis considerations. Structural support & mounting details by A/E.
9. Video Monitors - A proposal to be considered is to provide a fiber-optic connection (enclosed in conduit) from the video monitors in the operating room to the microscope in the frozen section area of the clinical laboratory. This would permit the surgical team in the operating room to see what the pathologist is talking about over the intercom while examining the biopsy specimen. This installation would reduce the need for anatomical pathologist to leave a contaminated area. Also, the surgical team would not have to wait for the pathologist to clean up, gown, and come to the operating suite to examine the tissue specimen.
10. Sprinkler System - Coordinate the location of the sprinklers with other ceiling systems in accordance with MCS, Division 15 Mechanical and Plumbing Design Manual for Hospital Projects.
11. Provide no ceiling tracks for intravenous solutions in the design. This restriction is based upon concerns for asepsis in the operating room.



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ARCHITECTURAL

Floor Area	650 NSF (60.45 NSM)	Wall Finish	GYP. BOARD(SC)
Ceiling	GYP. BOARD(SC)	Wainscot	ACROVYN ON CBB
Ceiling Height	10'-0" (3.0 METERS)	Base	INTEGRAL 6" (152 mm) COVE BASE
Floor Load	100 PSF	Floor finish	WSF
Note:		Lead Lining	TO BE DETERMINED SEE NOTE 3, GP 4-1b

Refer to PG-18-1 and PG-18-6

*ADDITIONAL 8" (203 mm) ACCESSIBLE SPACE ABV CLG FOR MICROSCOPE OR 10'-2" (3.05 METERS)

ELECTRICAL

Lighting		Power	
General	200 FC, 6.0 W/SF*	General	(1) MODULE EA WALL RECEPTACLES ON COLUMN
Special	SURGICAL LIGHT**		(2) LASER OUTLETS
Emergency	50% GEN FLUOR***	Special	****
		Emergency	*****

*COLOR IMPROVED FLUOR LAMPS MATCHING COLOR TEMPERATURE OF SURGICAL LIGHT
**(AR) TYPE B, 1500 W
***BATTERY BACKUP IN (8) FIXTURES
****(2) 7-1/2 KVA 12-CIRCUIT IPU
*****EACH IPU & X-RAY UNIT, (1) FILM PROCESSOR PER SUITE

TELECOMMUNICATIONS

Patient Monitor	YES	Data	WALL TERMINAL @ EACH UTIL. COL.
Nurse Call	-	Telephone	WALL MTD HAND FREE @ EACH UTIL. COL.
Code One	YES	Intercom	COMB. W/TELEPHONE
CCTV	EMPTY CONDUIT	Public Addr.	EMPTY CONDUIT
		ADP	EMPTY CONDUIT
		Radio	EMPTY CONDUIT

HEATING, VENTILATING AND AIR CONDITIONING

AC Load Lights	8.5 W/SF
AC Load Equipment	13.7 W/SF
Number of People	12
Noise Criteria	NC-40
Room Pressure	POSITIVE
Dry Bulb Temp Cooling (Range)	62-80°F (17-27°C)
Dry Bulb Temp Heating (Range)	62-80°F (17-27°C)
Minimum Air Changes per Hour	20 OCC/8 UNOCC
Minimum % Outside Air	100
100% Exhaust Air	YES
Special Exhaust	-
Steam	-
Relative Humidity Range	45-55 %
Relative Humidity Range	45-55 %

PLUMBING AND MEDICAL GASES

Cold Water	YES	Medical Air	YES
Hot Water	YES	Medical Vacuum	YES
Sanitary Drain	NO	Oxygen	YES
Acid Waste	-	Nitrous Oxide	YES
Silver Recovery	-	Nitrogen	YES
		Anesthesia Evac	YES

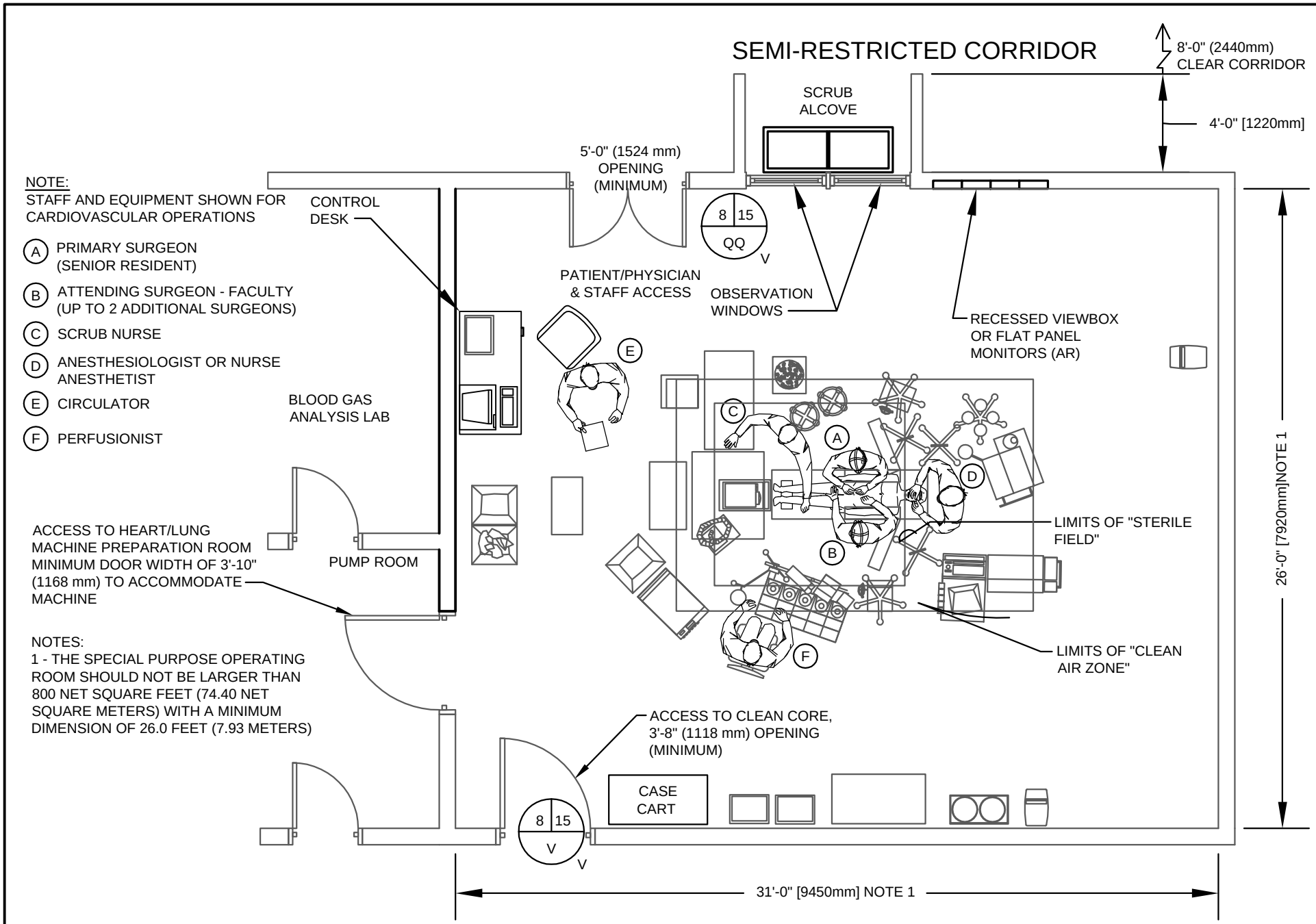
SPECIAL EQUIPMENT

None

SYMBOL	QTY	AI	DESCRIPTION	MCS
	AR	CC	WINDOW, VIEWING, FOR PATIENT OBSERVATION	13091
	AR	CC	RECEPTACLE MODULES; ONE MODULE ON EACH WALL, EACH MODULE SHALL CONSIST OF THREE SINGLE, 120V, 20 AMP, HOSPITAL GRADE TYPE RECEPTACLES, EACH ON EMERGENCY POWER & ON SEPARATE CIRCUIT.	16140
	AR	CC	ILLUMINATOR, FILM, X-RAY, RECESSED, 120 VOLT, 20 AMP, 14" X 17" (355 mm X 430 mm) (INSTALLATION NOT TO BE COMBINED WITH IPU'S OR OTHER ELECTRICAL DEVICES)	16510
	AR	CC	ILLUMINATION, GENERAL, RECESSED, WITH THREE LEVEL CONTROL	16510
	AR	CC	COLUMN, ARTICULATING OR TELESCOPING, CEILING MOUNTED COLUMN A: LOCATE AT HEAD OF TABLE, 48" (1220 mm) TO 72" (1830 mm) FROM THE CENTERLINE AND 24" (610 mm) TO 48" (1220 mm) TO THE LEFT OF THE CENTERLINE OF TABLE. COLUMN B: LOCATE AT THE FOOT OF THE TABLE, 48" (1220 mm) TO 72" (1830 mm) FROM THE CENTERLINE AND 24" (610 mm) TO 48" (1220 mm) TO THE RIGHT OF THE CENTERLINE OF THE TABLE EACH COLUMN CONTAINS THE FOLLOWING (EXACT TYPE AND QUANTITY SHALL BE COORDINATED WITH VAMC).	15491
	AR		INLET, VACUUM	15491
	AR		OUTLET, NITROUS OXIDE	15491
	AR		OUTLET, OXYGEN	15491
	AR		OUTLET, MEDICAL AIR	15491
	AR		OUTLET, NITROGEN	15491
	AR		INLET, VACUUM, DEDICATED ANESTHESIA GAS EVACUATION	15491
	AR		INLET, MASS SPECTROMETER (BLANK OUTLET) DATA CONNECTION TELECOMMUNICATIONS CONNECTION 4 SINGLE, 120V, 20 AMP HOSPITAL GRADE TYPE RECEPTACLES	16140
	2	CC	ISOLATED POWER UNIT PROVIDES ISOLATED ELECTRICAL POWER, INCLUDES LINE ISOLATION MONITOR, ISOLATION TRANSFORMER AND CIRCUIT BREAKERS	16675
	AR	CF	LIGHT, MAJOR, SURGICAL WITH VARIABLE INTENSITY CONTROL, SUSPENSION AS REQUIRED, CEILING MOUNTED	16515

SYMBOL	QTY	AI	DESCRIPTION	MCS
	AR	VV	TABLE, OPERATING, MOBILE-ELECTRIC	
	1	CC	ELECTRIC WITH SWEEP SECOND HAND, RECESSED	16665
	1	CC	CLOCK, ELECTRIC TIME ELAPSED, RECESSED	16665
	AR	CC	OUTLET, ELECTRICAL, 120 VOLT, 20 AMP, RECESSED FOR CLOCK(S)	
	AR	VV	X-RAY, MOBILE UNIT, C-ARM	
	1	CC	RECEPTACLE, ELECTRICAL, ELECTRICAL CHARACTERISTICS AS REQUIRED, FOR WATER COOLED LASERS	16140
	AR	VV	MICROSCOPE, MOBILE UNIT OR CEILING MOUNTED	
	AR	VV	MONITOR, VIDEO	
	AR	CC	OUTLETBOX, LASER - AIR COOLED	
	1	CC	RECEPTACLE, ELECTRICAL, ELECTRICAL CHARACTERISTICS AS REQUIRED, FOR AIR COOLED LASERS	16140
T-14	AR	CC	CABINET, STORAGE, STAINLESS STEEL RECESSED, 2 HINGED PANEL DOORS, LOCK AND 5 GLASS ADJUSTABLE SHELVES, 48"W X 22"D X 84"H (1220mm X 560mm X 2135mm)	12301
	1	VV	CRT, COMPUTER SYSTEM, WITH KEYBOARD	
	1	CC	RECEPTACLE, ELECTRICAL, QUADRUPLEX, FOR COMPUTER EQUIPMENT ITEMS	16140
	AR	VV	SURGICAL LASER(S)	
	1	VV	UNIT, ELECTRO-SURGICAL (BOVIE)	
	AR	VV	LOCKER, STORAGE, MODULAR	
	AR	VV	KICKBUCKETS	
	AR	VV	STOOL, SURGICAL	
	1	VV	STAND, MAYO	
	AR	VV	TABLE, SURGICAL INSTRUMENT	

SYMBOL	QTY	AI	DESCRIPTION	MCS
	1	VV	TABLE, BACK, LARGE	
	1	VV	TABLE, BACK, SMALL	
	1	VV	STAND, PREP	
	AR	VV	CART, CASE	
	1	CC	INTERCOM, STATION	16760
	1	CC	OUTLET, INTERCOM (EMPTY CONDUIT SYSTEM)	16111
	1	VV	UNIT, HYPER/HYPOTHERMIA	
	1	VV	HAMPER, SOILED LINEN, WITH HINGED SELF CLOSING TOP, 20" (510 mm) DIA.	
	1	VV	RECEPTACLE, WASTE, COVERED	
	1	VV	CART, EMERGENCY, "CRASH CART" APPROX. 36"W X 21"D (915 mm X 535 mm)	
	1	VV	DEFIBRILLATOR	
	AR	VV	SURGILIFT	
	1	VV	GURNEY, ELECTRIC	
	1	VV	CELL SAVER	
	1	VV	MACHINE, ANESTHESIA, PORTABLE	
	1	VV	CART, ANESTHESIA EQUIPMENT	
	1	VV	RACK, SURGICAL SPONGE	
	1	VV	STAND, IV, MOBILE	
	1	VV	MACHINE, SUCTION	
	1	VV	CART, PHYSIOLOGICAL MONITORING	
	1	VV	HEAD LAMP DEVICE	
	1	VV	MOBILE NURSE CONTROL DESK	



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Notes:

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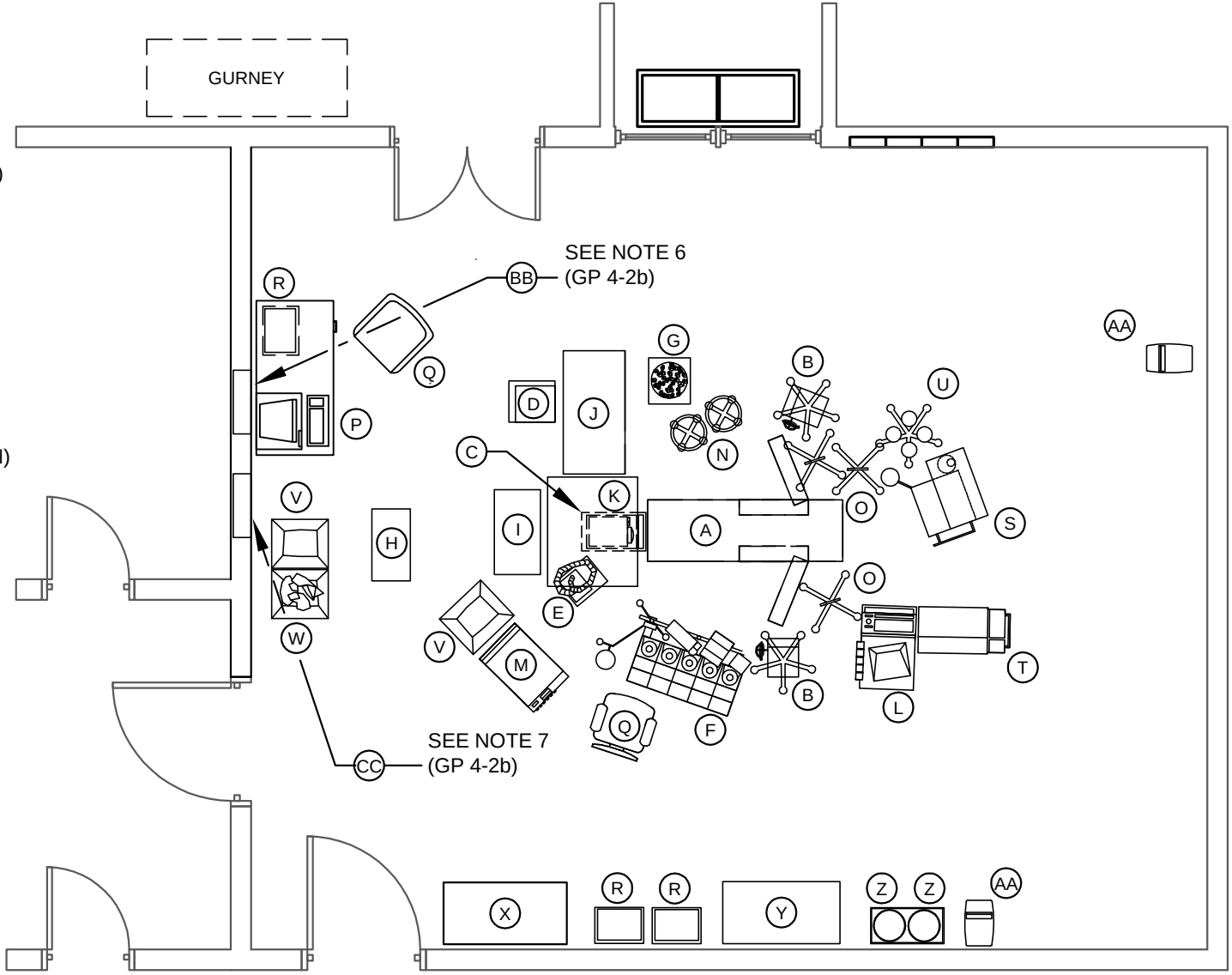
8. See Chapter 286 of the Equipment Guide List, PG-7610, Technical Information Library (TIL).

- (A) OR TABLE
- (B) HEAD LIGHT
- (C) BOVIE (UNDER TABLE)
- (D) DEFIBRILLATOR
- (E) BAIR HUGGER (UNDER TABLE)
- (F) HEART PUMP
- (G) SLUSH MACHINE
- (H) BACK TABLE
- (I) GOWN TABLE
- (J) PREP TABLE
- (K) OVERHEAD TABLE
- (L) TRANSESOPHAGEAL ECHO MACHINE
- (M) HEATER/COOLER (PERFUSION)
- (N) METAL BUCKET
- (O) IV POLE
- (P) COMPUTER
- (Q) CHAIR
- (R) LIFTS
- (S) ANESTHESIA MACHINE
- (T) ANESTHESIA CART
- (U) CANISTERS
- (V) TRASH HAMPER
- (W) LAUNDRY HAMPER
- (X) CASE CART
- (Y) MED CART
- (Z) RING STAND
- (AA) SHARP TRASH
- (BB) ELAPSED TIME CLOCK
- (CC) CLOCK WITH SWEEP SECOND HAND



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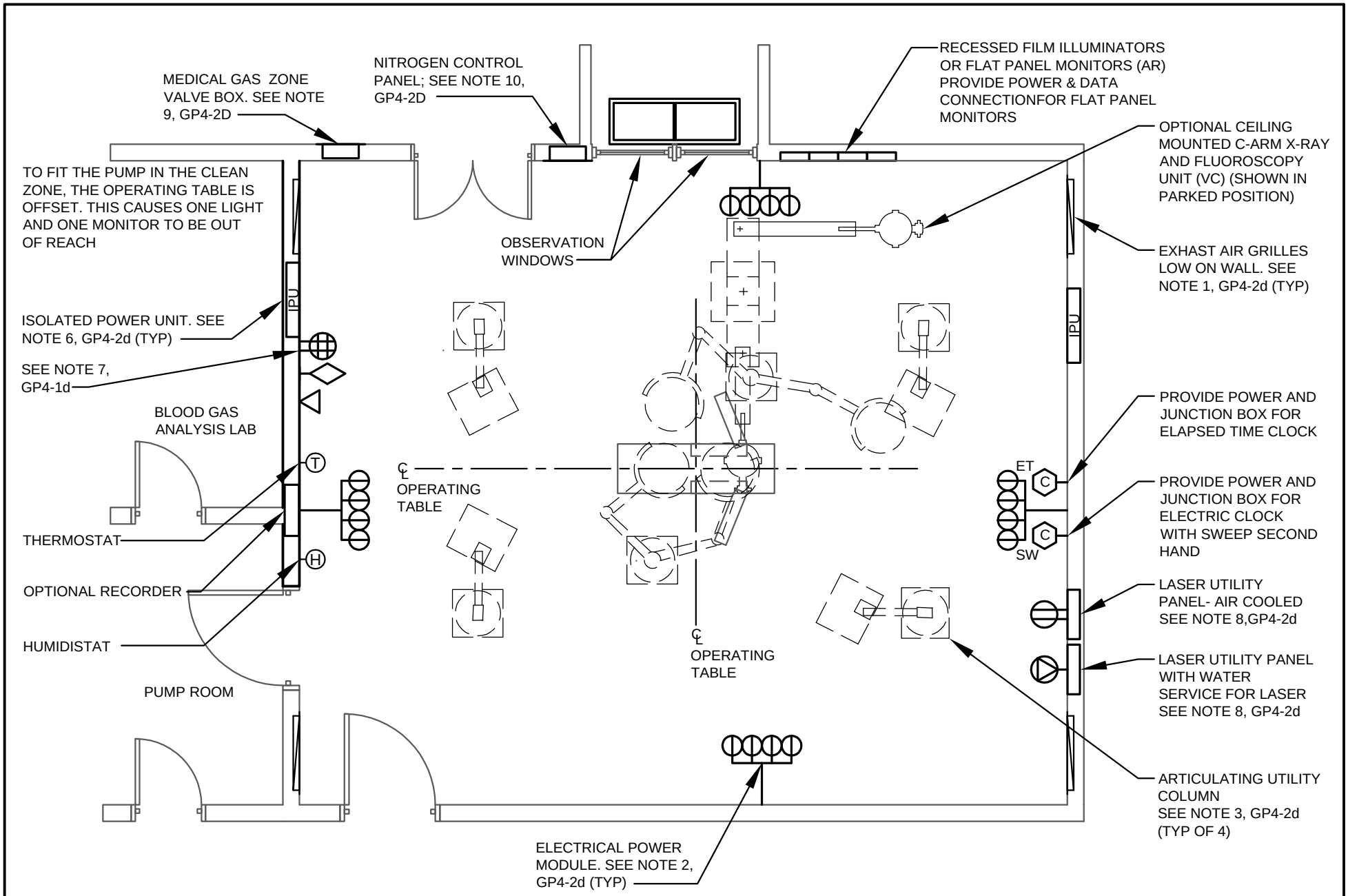

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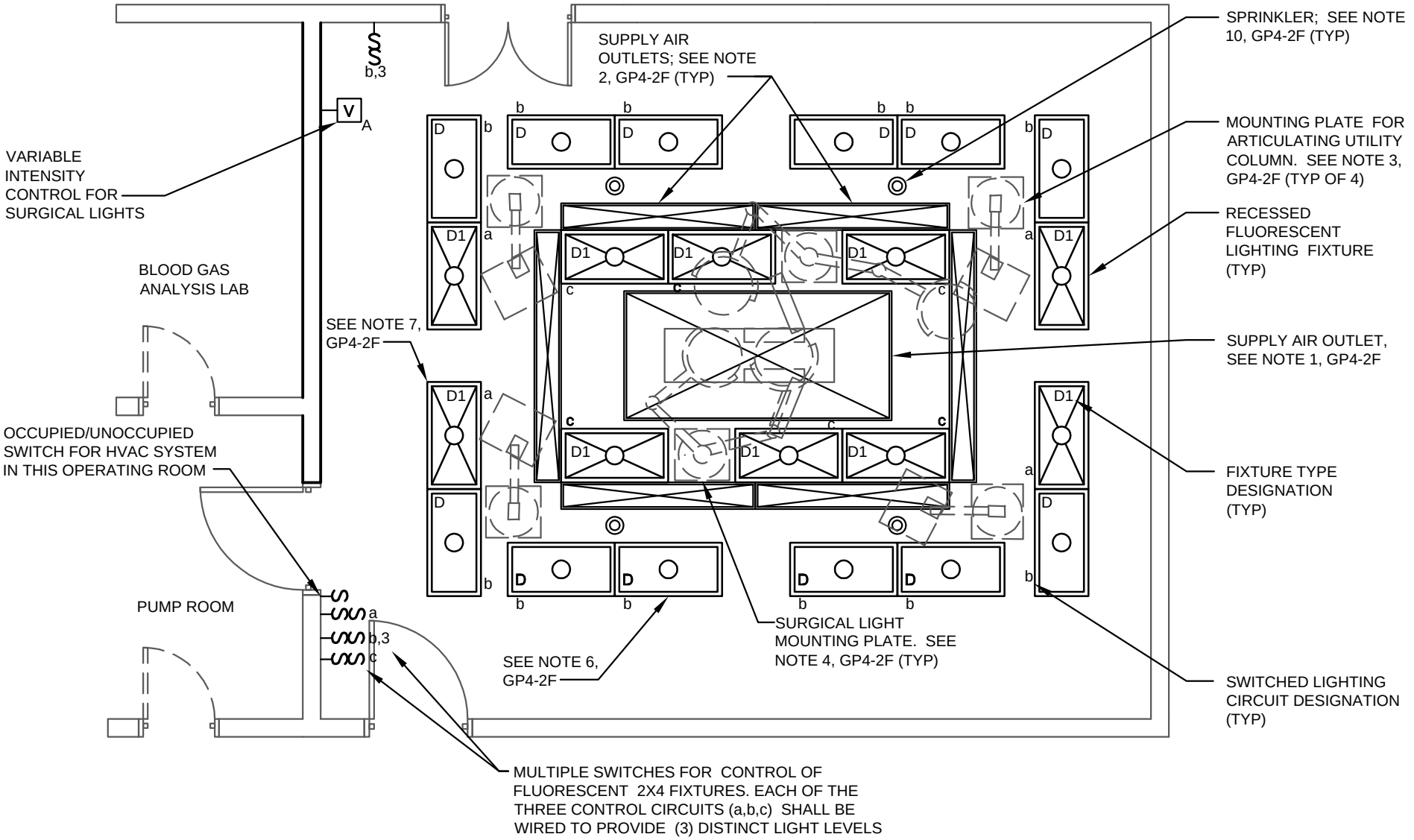
Notes:

1. Supply Air Outlet - Perforated stainless steel panel centered over operating table with no obstructions. A/E is to design it. (Do not scale.) This outlet is to provide 30 percent of supply air for the operating room. Air distribution is to be in a downward vertical direction. See HVAC Design Manual for Hospital Projects, PG-18-10.
2. Supply Air Outlets - Stainless steel multiple slot panel diffusers to be located above the perimeter of the "clean air zone". (See Functional Plan.) A/E is to design them. (Do not scale.) These outlets are to provide 70 percent of supply air for the operating room. This air is to be discharged in a vertical air stream inclined at an outward angle of fifteen degrees from the center of the room. See HVAC Design Manual for Hospital Projects, PG-18-10.
3. Mounting Plate for Utility Column - (Do not scale.) Size of mounting plate varies with manufacturer. Exact type, size, type, and location are to be determined by the A/E in coordination with the VAMC and Central Office program officials.
4. Surgical Light Fixture - Note that the location of the mounting plate is not to be placed directly over the operating table. That zone must be kept unobstructed for the supply air outlet and the plenum serving it above the ceiling. See Electrical Design Manual for Hospital Projects, PG-18-10.
5. Surgical Microscope - If VAMC chooses a ceiling-mounted microscope in lieu of a floor-mounted microscope, it must be supported by a fixed mounting plate. A ceiling track-mounted system is not to be used for the microscope due to concerns regarding asepsis. The exact size of the mounting plate depends upon the microscope selection. (Do not scale the guideplate.) Coordinate details and utilities requirements with the VAMC.
6. Fluorescent Light Fixtures - General illumination. Only 2 x 4 recessed fixtures are to be used in the operating room due to the fact that this size of fixture (with 6 lamps - Type D) is required in order to deliver enough ambient illumination while also producing color corrected light in the operating room. The design is not to include 1 x 4 fluorescent fixtures. Each group of fixtures (a,b,c) shall be controlled by switches (dimmers are not acceptable) so that 3 distinct levels of illumination are provided. For example, in the fixtures designated by "a," "b" and "c," the (2) outside lamps shall be controlled by one switch; the (4) inside lamps shall be controlled by a second switch.
7. General Illumination on Emergency Power - 50 percent of the fluorescent light fixtures above the operating table are to be on emergency power with battery backup (Type D1). The fluorescent fixtures above the head of the patient (where the nurse anesthetist administers anesthesia and monitors the patient's vital signs) are to be on emergency power. Since the "head of the table" may be reversed on occasions when the ceiling-mounted microscope is in use, fluorescent fixtures above both ends of the table are to be on emergency power.
8. Mounting Plate for Video Monitors - If the VAMC chooses a suspended video system instead of a cart-mounted system, the mounting plate must be integrated into the ceiling layout. The exact size and location of this plate must be determined. The mounting plate for the video monitors is not to be supported on tracks due to asepsis considerations.
9. Video Monitors - A proposal to be considered is to provide a fiber-optic connection (enclosed in conduit) from the video monitors in the operating room to the microscope in the frozen section area of the clinical laboratory. This would permit the surgical team in the operating room to see what the pathologist is talking about over the intercom while examining the biopsy specimen. This installation would reduce the need for anatomical pathologist to leave a contaminated area. Also, the surgical team would not have to wait for the pathologist to clean up, gown, and come to the operating suite to examine the tissue specimen.
10. Sprinkler System - Coordinate the location of the sprinklers with other ceiling systems in accordance with MCS, Division 15, Mechanical and Plumbing Design Manual for Hospital Projects
11. Provide no ceiling tracks for intravenous solutions in the design. This restriction is based upon concerns for asepsis in the operating room.



Design Guide - Surgical Service Department of Veterans Affairs	Special Purpose Operating Rm MAX: 800 NSF (74.40 NSM) MIN: 600 NSF (55.80 NSM) MIN: 700 NSF (65.10 NSM) CARDIAC	Reflected Ceiling Plan (METERS) 1 0 1 2 4 (FEET) Scale: 3/16"=1'- 0"	Guide Plate: 4-2g Date: August 2005

ARCHITECTURAL

Floor Area	800 NSF (74.40 NSM)	Wall Finish	GYP. BOARD(SC)
Ceiling	GYP. BOARD(SC)	Wainscot	ACROVYN ON CBB
Ceiling Height	10-0"* (3.0 METERS)	Base	INTEGRAL 6" (152 mm) COVE BASE
Floor Load	100 PSF	Floor finish	WSF
		Lead Lining	-

Note:

Refer to PG-18-1 and PG-18-6

*ADDITIONAL 8" (203 MM) ACCESSIBLE SPACE ABV CLG FOR MICROSCOPE OR 10'-2" (3.05 METERS)

ELECTRICAL

Lighting

General	200 FC, 6.0 W/SF*
Special	SURGICAL LIGHT**
Emergency	50% GEN FLUOR***

Power

General	(1) MODULE EA WALL (1) MODULE EA COLUMN (2) LASER OUTLETS
Special	****
Emergency	*****

*COLOR IMPROVED FLUOR LAMPS MATCHING COLOR TEMPERATURE OF SURGICAL LIGHT
**(2) TYPE B, 1500 W
***BATTERY BACKUP IN (10) FIXTURES
****(2) 7-1/2 KVA 12-CIRCUIT IPU
*****EACH IPU & X-RAY UNIT, (1) FILM PROCESSOR PER SUITE

TELECOMMUNICATIONS

Patient Monitor	YES	Data	WALL TERMINAL @ EACH UTIL. COL.
Nurse Call	-	Telephone	WALL MTD HAND FREE @ EACH UTIL. COL.
Code One	YES	Intercom	COMB. W/TELEPHONE
CCTV	EMPTY CONDUIT	Public Addr.	EMPTY CONDUIT
		ADP	EMPTY CONDUIT
		Radio	EMPTY CONDUIT

HEATING, VENTILATING AND AIR CONDITIONING

AC Load Lights	9.8 W/SF
AC Load Equipment	11.0 W/SF
Number of People	20
Noise Criteria	NC-40
Room Pressure	POSITIVE
Dry Bulb Temp Cooling (Range)	62-80°F (17-27°C)
Dry Bulb Temp Heating (Range)	62-80°F (17-27°C)
Minimum Air Changes per Hour	20 OCC/8 UNOCC
Minimum % Outside Air	100
100% Exhaust Air	YES
Special Exhaust	-
Steam	-
Relative Humidity Range	45-55 %
Relative Humidity Range	45-55 %

PLUMBING AND MEDICAL GASES

Cold Water	YES	Medical Air	YES
Hot Water	YES	Medical Vacuum	YES
Sanitary Drain	YES	Oxygen	YES
Acid Waste	-	Nitrous Oxide	YES
Silver Recovery	-	Nitrogen	YES
		Anesthesia Evac	YES

SPECIAL EQUIPMENT

None

SYMBOL	QTY	AI	DESCRIPTION	MCS
	AR	CC	WINDOW, VIEWING, FOR PATIENT OBSERVATION NOTE: CONSTRUCTION TO COMPLY WITH NFPA 101.	13091
	4	CC	RECEPTACLE MODULES; ONE MODULE ON EACH WALL, EACH MODULE SHALL CONSIST OF FOUR SINGLE, 120V, 20 AMP, HOSPITAL GRADE TYPE RECEPTACLES, EACH ON EMERGENCY POWER & ON A SEPARATE CIRCUIT.	16140
	AR	CC	ILLUMINATOR, FILM, X-RAY, RECESSED, 120 VOLT, 20 AMP, 14" X 17" (355 mm X 430 mm) (INSTALLATION NOT TO BE COMBINED WITH IPU'S OR OTHER ELECTRICAL DEVICES)	16510
	AR	CC	ILLUMINATION, GENERAL, RECESSED, WITH THREE LEVEL CONTROL	16510
	AR	CC	COLUMN, ARTICULATING OR TELESCOPING, CEILING MOUNTED COLUMN A: LOCATE AT HEAD OF TABLE, 48" (1220 mm) TO 72" (1830 mm) FROM THE CENTERLINE AND 24" (610 mm) TO 48" (1220 mm) TO THE LEFT OF THE CENTERLINE OF TABLE. COLUMN B: LOCATE AT THE FOOT OF THE TABLE, 48" (1220 mm) TO 72" (1830 mm) FROM THE CENTERLINE AND 24" (610 mm) TO 48" (1220 mm) TO THE RIGHT OF THE CENTERLINE OF THE TABLE. EACH COLUMN CONTAINS THE FOLLOWING:	15491
	2		INLET, VACUUM	15491
	1		OUTLET, NITROUS OXIDE	15491
	2		OUTLET, OXYGEN	15491
	1		OUTLET, MEDICAL AIR	15491
	1		OUTLET, NITROGEN	15491
	1		INLET, VACUUM, DEDICATED ANESTHESIA GAS EVACUATION	15491
	1		INLET, MASS SPECTROMETER (BLANK OUTLET) DATA CONNECTION TELECOMMUNICATIONS CONNECTION 4 SINGLE, 120V, 20 AMP HOSPITAL GRADE TYPE RECEPTACLES	16140
	AR		TYPE RECEPTACLES	16140

SYMBOL	QTY	AI	DESCRIPTION	MCS
	AR	VV	TABLE, OPERATING, MOBILE	
	AR	VV	X-RAY, MOBILE UNIT, C-ARM	
	AR	CC	SHIELDING, RADIATION, FOR ROOMS WITH FIXED X-RAY EQUIPMENT, (IN ACCORDANCE WITH SD AND NCRP REPORT NO. 33, 35 AND 49).	13091
	1	CC	CLOCK, ELECTRIC WITH SWEEP SECOND HAND, RECESSED	16665
	1	CC	CLOCK, ELECTRIC TIME ELAPSED, RECESSED	16665
	AR	CC	OUTLET, ELECTRICAL, 120 VOLT, 20 AMP, RECESSED FOR CLOCK(S)	
	AR	VV	X-RAY UNIT, RADIOGRAPHIC AND FLUOROSCOPIC EXTENDED ARM FROM WALL OR CEILING MOUNT (TO BE DETERMINED ON AN INDIVIDUAL BASIS)	
	AR	CC	SERVICE, ELECTRICAL, SPECIAL, AS REQUIRED FOR X-RAY EQUIPMENT	
	AR	CC	OUTLETBOX, LASER	
	1	CC	RECEPTACLE, ELECTRICAL, 208 VOLT, 30 AMP, SINGLE PHASE, FOR LASERS	16140
	AR	VV	MICROSCOPE, MOBILE UNIT OR CEILING MOUNTED UNIT	
	AR	VV	MONITOR, VIDEO	
	1	VV	CRT, COMPUTER SYSTEM, WITH KEYBOARD	
	1	CC	RECEPTACLE, ELECTRICAL, QUADRUPLEX, FOR COMPUTER EQUIPMENT ITEMS	16140
	1	VV	SURGICAL LASER(S)	
	1	VV	UNIT, ELECTROCAUTERY	
T-44	AR	CC	SHELF, CORROSION RESISTING STEEL, WIDTH AS REQUIRED	10801
	1	CC	COUNTER, CORROSION RESISTING STEEL TOP AND SPLASHBACKS, OPEN BELOW, PORTABLE, 30"D X 36"H X LENGTH (760 mm X 915 mm X L) AS REQUIRED	12303
	2	VV	LOCKER, STORAGE, MODULAR	

SYMBOL	QTY	AI	DESCRIPTION	MCS
	AR	VV	KICKBUCKETS	
	AR	VV	STOOL, SURGICAL	
	1	VV	STAND, MAYO	
	2	VV	TABLE, SURGICAL INSTRUMENT	
	1	VV	TABLE, BACK, LARGE	
	1	VV	TABLE, BACK, SMALL	
	AR	VV	CART, CASE	
	1	CC	INTERCOM, STATION	16760
	1	CC	OUTLET, INTERCOM (EMPTY CONDUIT SYSTEM)	16111
	1	VV	UNIT, HYPER/HYPOTHERMIA	
	2	VV	HAMPER, SOILED LINEN, WITH HINGED SELF CLOSING TOP, 20" (510 mm) DIA.	
	1	VV	DEFIBRILLATOR	
	AR	VV	SURGILIFT	
	1	VV	GURNEY	
	1	VV	CELL SAVER	
	1	VV	MACHINE, ANESTHESIA, PORTABLE	
	1	VV	CART, ANESTHESIA	
	1	VV	RACK, SURGICAL SPONGE	
	1	VV	STAND, IV, MOBILE	
	1	VV	SUCTION BOTTLE STAND	
	1	VV	CART, PHYSIOLOGICAL MONITORING	
	AR	VV	MONITOR, PHYSIOLOGICAL	

SYMBOL	QTY	AI	DESCRIPTION	MCS
	1	CC	OUTLET, JUNCTION BOX WITH BLANK COVER, CONNECTED BY EMPTY CONDUIT TO A SIMILAR OUTLET BOX IN THE SPECIAL RECORDING EQUIPMENT ROOM. (THIS PROVISION IS FOR PHYSIOLOGICAL MONITORING AND/OR RECORDING EQUIPMENT WHICH WILL BE FURNISHED)	
	AR	VV	HEAD LAMP DEVICE	
	1	VV	MACHINE, SLUSH	
	1	VV	MACHINE, HEART/LUNG BYPASS	
	1	VV	BALLOON PUMP	
	2	CC	ISOLATED POWER UNIT PROVIDES ISOLATED ELECTRICAL POWER, INCLUDES LINE ISOLATION MONITOR, ISOLATION TRANSFORMER AND CIRCUIT BREAKERS	16675
	2	CF	LIGHT, MAJOR, SURGICAL WITH VARIABLE INTENSITY CONTROL, SINGLE POINT SUSPENSION, CEILING MOUNTED	16515